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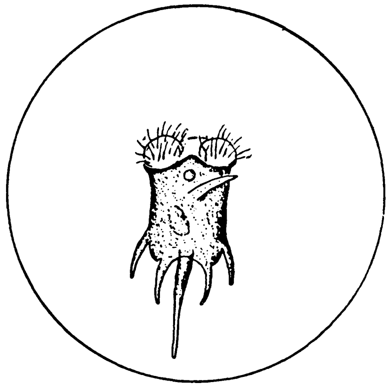
Descriptions of Certain Worms.

By T. S. Up de Graff, M. D., F. R. M. S., Elmira, N. Y.

An Annelid of the Nais Tribe—This curious water-worm has been found at different times, both in winter and in summer, in a large wooden tank in my conservatory, used for keeping alive *Menobranchi* and other reptiles. Its favorite haunt seems to be upon the under side of a board sunken in the bottom of the tank and covered with the various forms of the Rotifera. To the unaided eye it appears as a long, slender, white worm, about one-half of an inch in length. Examined under a half-inch objective and a one-inch eye-piece it presents the following characteristics: Body pellucid, annulate, and numbering thirty segments that are shorter but larger in transverse diameter as they approach the ventral portion. The cephalic segment is lanceolate and fringed with delicate, vibratory cilia. Rudimentary, black, eye-spot discernable near the center of this segment. At the articulation with the next segment is located, on the under side, a triangular mouth, with contractile labia from between which, in the act of feeding, is protruded a fundibuliform proboscis which grasps the food particles, consisting of algæ and desmids, withdrawing them within the œsophagus that leads to an elongated stomach. The segments are supplied with chitinous setæ, arranged in four rows—two dorsal and two ventral—in groups of three, save the six ventral segments of the cephalic portion, where the setæ become uncinated and are arranged in groups of five on each side of the ventral surface of the segments. These setæ and hooklets are partly contractile by means of fan-shaped muscles that have their attachments within the segments. They are used as aids to locomotion, and are employed much as are the legs of worm-like animals. The vent is situated in the center of the terminal segment, and is surrounded with six ciliated tentaculiform processes or lobes equidistant from each other. These lobes are club-shaped, nodose, and fringed with rather coarse, rhythmically-vibrating cilia that produce strong whirling currents in the water, directing floating particles toward the ventral orifice. These lobes are contractile, capable of being wholly withdrawn within the body. The perivisceral cavity is occupied by a straw-colored fluid containing pinkish globules of varying sizes that move freely about through the vermicular action of the intestinal canal and of the body of the animal. The intestinal tube, for a distance extending to about the sixteenth segment from the anal aperture, is lined with very delicate cilia, from the movement of which a current of water is directed inward, carrying with it minute monads and other food particle. Whether this ciliated structure is designed for purposes of respiration or as an aid to nutrition, or for both purposes combined, could not be determined in the short period for observation afforded by the specimens examined.

This annelid is perhaps the handsomest and most interesting of its class, presenting a very beautiful appearance under a one-inch objective, when its six plume-like tentacles are fully extended and the fringed margins in rapid vibration. I regret my inability to have observed more fully its digestive and circulatory apparatus, that I might have added a description of them also. I think that some new provisions for these functions will be therein revealed. No description answering to that of this curious annelid is to be found in any of the literature at my command. In Dr. McDonald's "Water Analysis" is figured one somewhat similar, having four lobes. There being no descriptive text, but simply the brief announcement that it is "conformable with the Proto of Oken," I am unable to determine how many features it may have in common with the one herewith presented.

A New Anuræa—This rotifer differs entirely from anyhi therto described, more particularly in its possession of a dorsal horn, or spine. The lorica is in the form of an oblong square with the two transverse angles, posteriorilv, acutely truncated, on the dorsal



aspect. From the four acute angles thus formed project, with a slight inward curve, four spines of nearly equal length and attenuated at the free extremities. In the median line, one-quarter of the distance from the brow, is situated a horn, curved slightly back ward, and of a length corresponding to one-half the length of the lorica. Immediately in front of this dorsal horn, is placed a bright, scarlet eye. The ventral side of the lorica is obtusely oval, terminating, posteriorily, in a long spinous horn, straight, and extending to an acute point. There are in all six spines; four at the four posterior angles of the dorsal surface, one on the dorsum in the cervical region, and one on the ventral extremity of the lorica. The anterior margen of the shell is spineless. The brow extends slightly beyond the border of the lorica, is doubly arched on both surfaces, from between which the animal protrudes two short, truncated lobes, from within the lorica, and near the lateral brims, upon which the rotatory organs are situated. Otherwise, the animal possesses the usual characteristics of its congeners, in the possession and location of billary glands, ovaries, three-toothed jaws, œsophageal head, alimentary canal, and stomach. The lorica is arched dorsally and rough. Ventral surface, flat and smooth. The creature revolves almost constantly, on its anterio-posterior diameter. Length of lorica, independent of the spine, 1-145th of an inch. It is found in stagnent ponds, and is most abundant in July, although I have taken specimens from under the ice in midwinter. I regard it as a unique specimen of the Brachionæa family, by reason of its dorsal spine, five posterior spines, and without anterior spines. Believing it to be new and hitherto undescribed. I have named it the *Anuræa Gleasonii*, in honor of the President of the Elmira Microscopicol Society.